

## ***Applied Clinical Informatics*** **Instructions to Reviewers**

As the Official eJournal of the International Medical Informatics Association (IMIA) and the American Medical Informatics Association (AMIA), ACI aims to establish a platform for knowledge sharing between clinical medicine and health IT specialists. It further intends to bridge gaps between visionary design and successful and pragmatic deployment focusing on translational or applied informatics. In reviewing submissions, please comment on the following major quality aspects:

- A. Significance for clinical care and Clinical Informatics
- B. Submission Type
- C. Quality of scientific content
- D. Originality and innovativeness
- E. Coverage of related literature
- F. Organization and clarity of the paper
- G. Conflict of Interest and Ethical Issues

Please find below more detailed explanations of each quality aspects that may help you to judge each of them. The original list of quality criteria was published by IMIA and was modified for Applied Clinical Informatics. For authors whose primary language may not be English, please comment on the appropriate use of the English language, and whether the manuscript will require considerable editorial revisions to be suitable for publication.

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## Categories and Quality Criteria

### A Significance

#### A1 Topic's importance to applied clinical informatics

- Is the topic current and significant to clinical care and to the specialty of Clinical Informatics?
- Is the topic interesting for the applied clinical informatics community?
  - Is there new shared knowledge, experience and/or expertise on the topic?
  - Is the topic important to improving care quality, safety, efficiency, and or cost?
  - Is the work described applied in nature (ACI only rarely will publish methodological work)?

#### A2 Impact of the paper on the topic

- Does the paper address a relevant applied clinical informatics problem?
- Are the presented data and results scientifically credible and feasible?
  - Is this paper of interest for the medical and clinical informatics communities?
  - Does it add scientific knowledge, experience or expertise on the given topic?
  - Does it demonstrate an impact (positive or negative) on patient care?
  - Can the results be translated to clinical practice or generalized to similar environments/processes?
  - Is it of educational value (candidate for a tutorial)? Is it newsworthy (candidate for a news item)?

## B Submission Types

In general, the manuscript text (excluding summary, references, figures, and tables) should be in the range of 2500–3000 words but not exceed 5,000 words. Submissions to ACI will be subject to a double-blinded peer review process in the FIRST round of reviews. This means that **the authors are not aware who conducts the review, but also that the reviewer does not know the identities and institutions of the authors**. This should guarantee a fair and un-biased review of the paper. Subsequent reviews will be unblinded.

### B1 Research Articles

Research Articles contain original work based on original research or experimentation not previously published (journal or online) or under consideration by another journal.

### B2 Reviews

Reviews contain a state of the art review and summary of a specific subject relevant to ACI. Reviews may be solicited by the editorial board based on a perceived need for discussion of a specific topic.

### B3 State of the Art / Best Practice Paper

State of the Art / Best Practice Papers would be generally solicited contributions that describe the state of the art in a particular area of Clinical Informatics. These papers will be based on published research and personal experience with the topic. They will be heavily geared towards lessons learned, best approaches, safety and quality considerations, and outcomes. These submissions are intended to serve as an evidence-based summary of current thinking and practice on an issue with the aim of providing individuals and organizations with a condensed, practical, highly applicable resource relating to an applied clinical informatics issue. They may also signal areas for future research. Systematic literature reviews are not required for this type of submission.

### B4 Case reports

Case reports are intended to be an ACI equivalent to case reports in clinical medicine. However, the focus in case reports will be an information system. Case reports focus on cases of interest with the emphasis on „lessons learned“. Case reports that focus on failures or successes and their analysis are preferred. Short case reports are preferred and they should not exceed 2,000 words.

### B5 Letters to the Editor

Letters include short highlights of applied clinical informatics that are significant enough for dissemination in ACI. Letters do not require keywords and summary, and should not exceed 2,000 words (ca. 14,000 characters). They should include no more than one table or figure, respectively. Letters to the editor also undergo a review process.

### B6 Editorials

Editorials allow an expert to provide an opinion on a specific topic relevant to ACI. Editorials may be solicited by the editorial board based on a perceived need for discussion of a specific topic and should not exceed 1,500 words.

## **C Quality of scientific content**

### **C1 General Criteria**

- Do the keywords represent the topic?

### **C2 Background and motivation**

- Is the relevance of the paper stated clearly?
- Is the motivation for the work stated clearly (previous research, existing need or problem)?

### **C3 Purpose of the paper**

- Are the aims and/or study/research questions presented clearly and unambiguously?
- Do the aims and/or questions make sense in the context of the given topic?

### **C4 Method and approach**

- Are the analyses, designs, methods, approaches and implementations/deployments presented clearly and unambiguously? Is the given information sufficient to reproduce the method or approach?
- Are evaluation methods and approaches placed in context with other possible methods and approaches?
- Is it explained why this specific evaluation method and approach was chosen over others?
- Are the methods and approaches for interventions appropriate to answer the study/research questions?

### **C5 Presentation of results**

- Are the results presented clearly and unambiguously?
- Is it clear how, and from where, the results have been derived?
- Are objective results and subjective interpretations distinguished clearly?
- Do the results answer the initial study/research questions?

### **C6 Discussion**

- Is the discussion formulated clearly and unambiguously?
- Are facts, conclusions and opinions separated clearly?
- Are the results critically assessed?
  - Are negative data or apparently contradictory results discussed or explained?
  - Are limitations of the methods and results been discussed?
  - Are results discussed in the context of other recent research?
- Is the significance of the results discussed?
  - Are potential generalizations of the results discussed?
  - Are implications of the results for patient care discussed?

### **C7 Conclusion**

- Does the conclusion contain a succinct statement of findings and conclusions?
- Are these reflected in the Abstract?
- Are the conclusions reasonably derived from the presented results?
- Are important and novel aspects of the work emphasized?
- Are these in the conclusion (and Abstract)?
- Are the implications for future research, or for patient care, discussed?

## **C8 Additional criteria for specific types of papers**

### ***Additional criteria for application reports***

- Are the objectives of the system (technical system, application, procedure) clear?
- Is the problem the system should solve stated clearly and unambiguously?
- Are the architecture and the user functions of the system presented in sufficient detail?
- Are the clinical environment and contexts in which the system is being developed or tested addressed in sufficient detail? Are the clinical processes and outcomes which the system is to modify described in sufficient detail?
- Is the system used in a realistic (clinical) or simulated environment?
- Are the effects and impacts of the system presented in a systematic fashion, including presentation of performance and utilization measures and unanticipated consequences (good and bad) in relation to the initial design objectives of the system?
- Is the application/system or intervention/approach (still) being used?
- Are „lessons learned“ of use to others? Are they illustrated by the report? Addition criteria for systematic reviews
- Is the area of review clearly defined?
- Has locating, selecting and extracting papers for review been defined clearly and reproducibly?
- Are the included papers current?
- Is the review based on a careful, international and longitudinal analysis of the available literature?
- Does the review possess adequate depth and diversity?
- Have interesting conclusions and perspectives been presented and discussed?
- Is the discussion of different findings well-balanced?

### ***Additional criteria for seminal and viewpoint papers***

- Is the paper based on long-term experiences and expertise in a given area?
- Do the authors have a clear thesis or opinion?
- Are the presented opinions authoritative, reasonable and interesting to others?
- Is it clear how the paper relates to prior research?
- Are the facts presented correctly?
- Does the article promote discussion and present initiatives?

### ***Additional criteria for evaluation papers***

- Does the study description follow the [STARE-HI](http://www.imia-medinfo.org/new2/Stare-HI_as_published.pdf) guidelines? ([http://www.imia-medinfo.org/new2/Stare-HI\\_as\\_published.pdf](http://www.imia-medinfo.org/new2/Stare-HI_as_published.pdf))

## **D Originality and innovativeness**

- Are the application, study/research question, method/approach and/or results new and specific?
  - Is the presented technology, method or approach novel?
  - Does it present a new technology, method or approach that enhances care?
  - Does it present a proven technology, method or approach in a new domain and/or context?
- Does the work add enough to what is already available in the literature to be published?

## **E Coverage of related literature**

### **E1 References**

- Are the references sufficiently comprehensive for the given topic?
  - Do the references sufficiently reflect international research?
  - Are they up to date?
  - Are they comprised of only a limited number of papers from the authors' working group?
- Do the references contain sufficient information to find them?
  - Are they published (not 'in press' and/or 'personal communication')?
  - Are they in a standard format (Medline, Vancouver).

## **F Organization and clarity of the paper**

### **F1 Organization the of abstract**

- Is the abstract structured?
- Does the abstract state the relevance, aims, questions, methods, results and conclusions?
- Is the abstract concise and informative?
- Are data presented in the abstract consistent with results and conclusions in the body of the paper?

### **F2 Organization of the paper**

- Is the title clear, understandable and meaningful?
- Is the structure of the article clear and adequate?
- Is the presentation coherent, precise and accurate?
- Does the article cover the topic and its significance adequately?
- Do the sections of the article have sufficient depth to be informative?
- Are all figures and tables understandable?
- Is the combination of text and figures/tables well-balanced?
- Are only useful figure and table data repeated in the text?
- Are there discrepancies between text, figures and tables?
- Have all abbreviations been explained sufficiently? Is there a legend?

## **G Conflict of Interest and Ethical Issues**

### **G1 Conflicts of Interest**

- Are conflicts of interest described?
- Are there concerns that the conflict of interest may significantly impact on the results, discussion, or conclusions of this manuscript?

### **G2 Human Subject Research Approval**

- If this is a study involving human subjects, is the process for obtaining Human Subject Research Approval or Exemption described?

### **G3 Multiple Choice Questions**

- Are there at least two multiple choice questions?
- Is the answer for each question the only true answer?

## **References**

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2. Ammenwerth E, Wolff AC, Knaup P, Ulmer H, Skonetzki S, van Bommel JH, McCray AT, Haux R, Kulikowski C. Developing and evaluating criteria to help reviewers of biomedical informatics manuscripts. J Am Med Inform Assoc. 2003 Sep-Oct;10(5):512–4. URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC212789/?tool=pubmed> [last accessed 10 November 2009].
3. Talmon J, Ammenwerth E, Brender J, de Keizer N, Nykänen P, Rigby M. STARE-HI – Statement on re-reporting of evaluation studies in Health Informatics, Int J Med Inform 2009; 78(1): 1–9. <http://www.imia.org/endorsed/endorsed.lasso>.